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Name _____

Reteaching: For use after Lesson 3.5, Algebra 2 with Trigonometi

Algebra 2 GHP
Unit #11
WS #12

Inverse Functions

■ **Concept:** Finding the inverse of relation or function

Remember: The inverse of a relation is the relation obtained by interchanging the first and second coordinates in every pair of the original relation.

Example: Find the inverse of the relation $\{(1, 1), (-1, 1), (2, 4)\}$.

The inverse is $\{(1, 1), (1, -1), (4, 2)\}$.

Find the inverse of each relation.

1. $\{(-1, -1), (0, 0), (2, 8), (3, 27)\}$ _____
2. $\{(-3, 3), (-2, 2), (-1, 1), (0, 0), (1, 1)\}$ _____
3. $y = 2x - 1, x = 0, 1, 2$ _____
4. $y = -\frac{1}{2}x - 3, x = -2, 0, 2$ _____

■ **Concept:** Determining if the inverse of a function is a function

Remember: The inverse of a function is a function if for every x value of the inverse there is exactly one y value.

Example: Find the inverse of the function $y = 2x - 2$. Determine if the inverse is also a function.

To find the inverse of $y = 2x - 2$, interchange the values of x and y and solve for y.

$x = 2y - 2$

$y = \frac{1}{2}x + 1$

For each value of x, there is exactly one value for y.
So the inverse is also a function.

Find the inverse of each function. Determine if the inverse is also a function.

5. $y = x + 4$ _____
6. $y = 3x - 2$ _____
7. $f(x) = 4x$ _____
8. $f(x) = x^2 - 1$ _____
9. $\{(x, y): y = -2x, x \text{ is a positive integer less than } 3\}$ _____
10. $\{(x, y): y = x - 3, x \text{ is a negative integer greater than } -3\}$ _____